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Published: November 2, HEI2 (1990)

Title of the Device

INSTRUMENT FOR CLEANING EAR CAVITY FITTED WITH FIBER

## SCOPE

10

## SPECIFICATION

(1) Title of the Device

## INSTRUMENT FOR CLEANING EAR CAVITY FITTED WITH FIBER SCOPE

15 (2) Utility model claims:

1. A cleaning instrument provided with a light-emitting element for illumination so as to illuminate its tip with light.

2. A cleaning instrument as set forth in claim 1, wherein  
20 the illuminating member is provided with a lens.

3. A cleaning instrument as set forth in claim 2, wherein the image picked up by the lens is transmitted through optical fibers to a distant place where it is recognized.

### (3) Detailed Explanation of the Device

## 25 Field of Industrial Application

The present device is concerned with a cleaning instrument for use in the ear cavity or the like.

### Prior Art

It has been necessary that a conventional instrument  
for cleaning the ear cavity should be used under illumination  
with a room illuminator or the like.

### Problem to be solved by the device

Accordingly, the inside of the ear cavity has not been sufficiently illuminated. Further, when one operates such a cleaning instrument in cleaning his own ear cavity, he has encountered, for example, the problem that the inside of 5 his ear cavity can not be fully cleaned and the problem that the wall or the like of the ear cavity is apt to be hurt since he operates the instrument only by the sense of his fingers. Furthermore, even when he has someone else operate the instrument in cleaning his ear cavity, he has encountered, 10 for example, the problem that the wall or the like of his ear cavity is apt to be hurt since the operator, likewise, can not handle the instrument delicately.

#### Means for Solving the Problems

The present device has been achieved in order to solve 15 the above mentioned problems. According to the cleaning instrument according to the present device, it is possible to clean the ear cavity simply and safely without fail because the instrument is operated by both perception as in conventional cases and the sense of sight.

#### 20 Effect

When a switch 4 is thrown, a current flows from a power source 11 to a light-emitting element 8. The element 8 then emits light. The emitted light is transmitted through a lens 10 and illuminates a picking member 5 distant from the optical 25 center by the focal length (F) to illuminate the inside of the ear cavity or the like. The image picked up by the lens 10 passes a fiber code 6 through optical fibers 9 and reaches an inspection means 7. The image is then magnified with a magnifying lens 7' built in the member 7 and can be recognized 30 more clearly.

#### Example

As the forgoing explanation has shown, according to the

cleaning instrument according to the present device, it is possible to clean the ear cavity simply and safely without fail because the cleaning instrument is operated by both perception as in conventional cases and the sense of sight.

5 (4) Brief Explanation of the Drawings

Fig. 1 is a view illustrating the entire cleaning instrument according to the present device, and Fig. 2 and Fig. 3 are views illustrating an example and details of the cleaning instrument according to the present device.

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⑪考案の名称 フアイバースコープ付耳挖内清浄用具

⑫実 願 昭63-125088

⑬出 願 昭63(1988)9月24日

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(1) 考案の名称

ファイバースコープ付耳挖内清浄用具

(2) 実用新案登録請求の範囲

- ① 照明用発光素子を具備し、照明光により先端部を照明することを特徴とする清浄用具
- ② 前記照射部がレンズを具備することを特徴とする清浄用具
- ③ 前記レンズでとらえた画像を光ファイバーを通して遠隔地にて確認することを特徴とする清浄用具

(3) 考案の詳細な説明

産業上の利用分野

本考案は、耳挖内等で用いる清浄用具に関するものである。

従来の技術

従来、耳挖内清浄用具は室内の照明装置等で活用しなければならなかった。

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## 考案が解決しようとする問題点

従って、内部が十分に照らされなかつた。また、自らの為に清浄する場合は指先の感覚によってのみ操作するので内部を十分清浄できなかつたり、あるいは傷つけ易いなどの問題があつた。また、第三者による操作も同様微妙な操作がでかず傷つけやすい等の問題があつた。

## 問題点を解決するための手段

本案はこの欠点を除くためになされたもので、従来のカンだけにたよらず視覚と併せて操作し、簡便にかつ安全確実に清浄することができる。

## 作用

スイッチ④をONにすれば、電源①より電流が発光素子⑧へ流れ、⑧より光が放射される。放射光はレンズ⑩を通じて焦点距離(F)である焼き出し部⑤を照らし、耳控内部等を明るくする。レンズ⑩がとらえた画像は、光ファイバー⑨を通じてファイバーコード⑥を通過しのぞき口⑦に到達する。その際のぞき口⑦に内蔵されているレンズ⑦'によって拡大され、より明確にとらえることができる。

### 実施例

以上説明したように、本考案による清浄用具によれば、従来の指先等の感覚やカンと併せて、視覚も併され簡便かつ安全確実に清浄を行うことができる。

### (4) 図面の簡単な説明

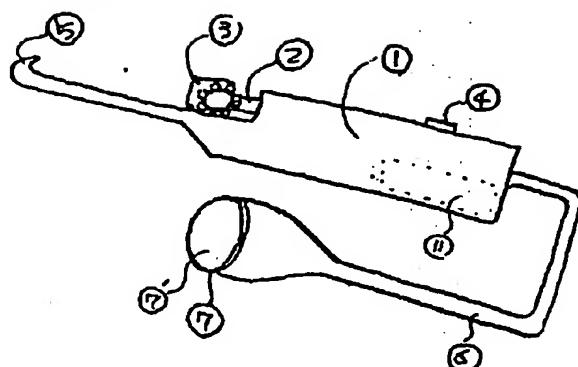
第1図は本考案の清浄用具の全体図、および第2図、第3図は本考案の実施例と詳細を示す図である。

実用新案登録出願人

下 保 博

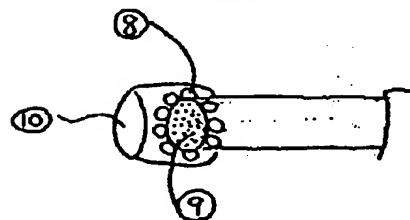
頭 面

ガ1図



- ① 耳かき本体
- ② 光ファイバー
- ③ (⑧ ⑨ ⑩に分類)
- ④ スイッチ
- ⑤ 拡き出し部
- ⑥ ファイバーコード
- ⑦ のぞき口
- ⑧ 拡大レンズ
- ⑨ 発光素子
- ⑩ レンズ
- ⑪ 電源(乾電池)

ガ2図 ③の拡大図

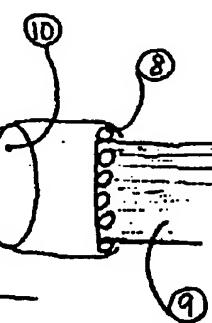


ガ3図

焦点距離

(F)

(5)



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